across a plane, in which lie scattered in all positions a great number of magnetic masses possessed of considerable force. If the ball is not projected with a certain very great velocity . . . its motion will be checked by their attractions. But if the velocity is great enough, so that the actions of the magnetic forces only last for a sufficiently short interval of time, then it will certainly get through and beyond them, without suffering any sensible loss of velocity." Further evidence of his clarity of thought need scarcely be given.

In conclusion let us admit the great debt of gratitude which we owe for the production of this book to the translator, Mr. J. M. Child, and to the Government of the Kingdom of Serbs, Croats, and Slovenes who generously financed its publication.

Our Bookshelf.

Chelsea Porcelain. By William King. Pp. xv + 135 + 70 plates. (London: Benn Bros., Ltd., 1922.) 73*s.* 6*d.* net.

IT seems appropriate that this elaborate and sumptuously illustrated volume should proceed from an official of the ceramic department of the Victoria and Albert Museum, where an extensive and thoroughly representative collection of Chelsea porcelain is permanently displayed for the delectation of the public. Such a handbook of one section of the treasures housed in the museum, setting forth the story of their manufacture and the reasons or sentiments which inspired the decorations they bear, should bring many fresh visitors to the collections. It should stimulate the interest which each succeeding generation manifests in the doings of the potters and porcelain-makers of a past age, for they have proved themselves the unconscious historians of its social customs. It is impossible for any one, however limited his purview, to linger among these brilliant and fascinating objects without feeling a desire to know more of their history and how they came to be decorated as they are. Even to those who know little of historic styles in decorative art it must be obvious that whatever is native and English in these porcelains is interwoven with motives caught from the work of other countries than ours, Oriental as well as European, so that they provide even a casual observer with endless food for thought and research.

To-day, after a century and a half of change, it stirs our blood to examine such masterpieces of patient skill and elaboration, wrought in a beautiful but difficult material with an insufficient regard to time and cost, when an English factory tried conclusions with the state-aided establishments of Europe and won a well-deserved reputation for its courage and skill.

The gradual development of the Chelsea enterprise from its modest beginnings to the heyday of its success is traced with a wealth of detail drawn from the patient labours of many previous investigators, but its story is enriched by the knowledge which is only to be acquired from the constant handling and critical examination of fine and authentic examples; so that, for many a long day, this volume is likely to remain a standard authority on its subject.

The numerous illustrations are remarkable for their variety and excellence. They cover the whole field of the porcelains made at the Chelsea factory, and, whether in colour or in half-tone, convey an excellent idea of the range and quality of the productions of that famous factory. WILLIAM BURTON.

Blood Transfusion. By Dr. Geoffrey Keynes. (Oxford Medical Publications.) Pp. vii + 166. (London: Henry Frowde and Hodder and Stoughton, 1922.) 8*s.* 6*d.* net.

THE transference of blood from healthy persons to make up for deficiencies of quantity or quality in the sick has been proposed and occasionally practised for 300 years or more, but it is only within the last decade, and especially since the experience of the war, that this valuable therapeutic procedure has been put on a firm foundation and has come into common use. Dr. Keynes gives here an admirable account of our present knowledge of the theory and practice of transfusion. There is a most interesting historical account of the work of the pioneers, and it is curious to note that Higginson, in the middle of the nineteenth century, invented and used his syringe for this rather than its present purpose. The selection of blood donors is fully considered and a good description given of the different "blood groups" found in human beings—a topic of much wider importance than its immediate application to human therapy. In technique, the author's experience has led him to prefer the method of withdrawing the blood into a solution of sodium citrate to prevent clotting and then injecting a known amount at leisure into the recipient: anastomosis of the blood vessels of the two parties is difficult and uncertain.

In practice, the main usefulness of transfusion has been found in cases of hæmorrhage and shock, in which, as might be expected, blood has proved of more value than salt solution or Bayliss's gum. It has given good, if generally transitory, results in pernicious anæmia and a few cases of severe bacterial infections, but there is no very clear evidence of its utility unless the patient has the definite indication of too small a blood volume or too little hæmoglobin.

There is a bibliography of more than 300 items and a good index. Complete as is the account from the point of view of the practical surgeon, some further consideration of the experimental work of Worm Müller and his successors would have been welcome. There is, too, no adequate discussion of what happens to the red cells in their new home, how long they last, and how they are destroyed. A. E. B.

The Voice Beautiful in Speech and Song: A Consideration of the Capabilities of the Vocal Cords and their Work in the Art of Tone Production. By Ernest G. White. Third edition. Pp. viii + 166. (London: J. M. Dent and Sons, Ltd., 1922.) 7*s.* 6*d.* net.

THE author's devastating thesis, that the human voice is *produced* by the frontal sinuses and other cavities in the bones of the head, while "the vocal cords," which he regards as strings, "are not the seat of sound," is not supported by a particle of evidence. That so

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misleading a book should not only find a publisher but also reach a third edition, is disquieting. A teacher should be teachable, and the serious student of phonation will find sound information as to the parts played by the sinuses and the glottal lips in the production of vocal tone in Musehold's "Akustik und Mechanik des menschlichen Stimmorgans," 1913, which gives excellent laryngo-stroboscopic photographs of the miscalled "vocal cords" in action, confirming and supplementing Manuel Garcia's famous communication to the Royal Society in 1855 on the differing laryngeal mechanism for chest and falsetto registers. The kinematograph might do good service here.

The exhibition of a slow-motion film, such as that prepared by Prof. Panconcelli-Calzia and Dr. Hegener, of Hamburg, showing the lips of the glottis producing a definite note of chest register by periodically parting and meeting, parting and meeting, letting out as many tiny puffs of compressed air per second as there are double vibrations in the note sung (quite in agreement with what R. Willis, of Cambridge, wrote in 1828), and finally opening very wide for the singer to draw breath, would give in one minute a clearer idea of their double-reed action than pages of careful description may convey. Few misnomers, surely, have wrought so much pseudo-scientific havoc as Ferrein's *chordæ vocales* (1741).

W. P.

An Introduction to Psychology. By S. S. Brierley. Pp. viii+152. (London: Methuen and Co., Ltd., 1921.) 5*s*. net.

UNLIKE many writers for non-professional students of psychology, the author of this work does not attempt to minimise the difficulty of the subject, nor does she seek to evade problematical conclusions by specious dogmatism. The book consists of two parts, the first dealing with the scope and method of psychology, and the second with some of the general problems of the subject. This latter part brings before the reader the fascinating but bewildering array of problems with which the modern psychologist is confronted. The reader is not left with the idea that having perused this book he knows everything about psychology, but he will feel that he has an excellent basis for continued study. The general plan is original, and while incorporating much of the work of such writers as James, McDougall, Freud, and Jung, yet it is much more than a mere compilation of the work of others. It will be of the greatest value not only to the beginner but also to any reader who wishes to get a clear survey of the state of psychology at the present time.

Physiology and Biochemistry in Modern Medicine. By Prof. J. J. R. MacLeod, assisted by Roy G. Pearce, A. C. Redfield, and N. B. Taylor, and by others. Fourth edition. Pp. xxxii+992. (London: H. Kimpton, 1922.) 42*s*. net.

THE first edition of this valuable text-book was reviewed at some length in NATURE of December 18, 1919 (vol. 104, p. 389), so that little remains to be said except to congratulate the author on the rapid appearance of successive editions. This fact is good evidence that the work fulfils a want. It will be remembered that it is especially directed to satisfy the requirements of the student and the practitioner of medicine, so that it is natural to find certain branches of physiology more fully discussed than others. It is perhaps open to question whether, for the class of reader contemplated, the common practice of treating such questions as osmotic pressure and the colloidal state apart from that of the physiological processes in which they play an important part, is to be recommended. Prof. MacLeod has kept the book well up-to-date, and it has received valuable improvements and additions since the appearance of the first edition in 1919.

The Conquest of the New Zealand Alps. By Samuel Turner. Pp. 291. (London: T. Fisher Unwin, Ltd., 1922.) 21*s*. net.

MR. TURNER is a mountaineer of varied experience extending over a quarter of a century. His latest book describes six seasons' climbing in the New Zealand Alps, including ascents of Mounts Cook and Tasman, the two summits of the group. It is mainly a climber's record of difficulties and triumphs, but incidentally it contains much description of the peculiarities of the New Zealand Alps and the ice conditions encountered there. On the whole, the climbs in most cases were not of exceptional difficulty, but there seems to be a tendency for the snow slopes to hang steeper than in most countries. This is due possibly to the nature of the rock, but more likely is the outcome of the snow falling frequently and at relatively high temperatures, which gives it greater binding power. The snowfall at low altitudes even in midsummer is an additional difficulty.

La Séparation Industrielle des Solides en Milieu Liquide. Par Prof. Léonce Fabre. Pp. v+227. (Paris: G. Doin, 1922.) 16 francs.

THE treatment of filtration from the point of view of chemical engineering forms the principal subject of this book. The various types of apparatus, including immersion and rotary filters, are fully dealt with, and the auxiliary apparatus, including pumps, thickeners, and classifiers, are also described, and methods of decantation are considered. The book is up-to-date, and the numerous illustrations add considerably to its interest and value: it is a most useful contribution to the literature of chemical engineering. As is usual in French books, the absence of an index takes away practically half the value of a work of this kind. This may seem a small point to the author, but English and American readers of technical books will consider it a very serious defect.

Seven Ages of Childhood. By Ella L. Cabot. Pp. xxxiv+321. (London: Kegan Paul and Co., Ltd., 1921). 12*s*. 6*d*. net.

MRS. CABOT divides the period from coming into the world to coming of age into seven sub-periods which she names the dependent age (0-3), the dramatic age (3-7), the angular age (7-11), the paradoxical age (12-14), the age of the gang or team (11-16), the age of romance (15-18), the age of problems (16-21). On all these she writes pleasantly and sympathetically. There may be little of striking originality in her pages; but there is a touch of serene wisdom which may perhaps be found more helpful.

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